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PATENT ABSTRACTS OF JAPAN

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(22)Date of filing : **11.05.1999** (72)Inventor : **WATANABE TAKASHI**

(54) MOBILE TELEPHONE DEVICE

(57)Abstract:

PROBLEM TO BE SOLVED: To largely display a large quantity of various kinds of information by providing outer output means for outputting the output signal indicating various kinds of information to a display device.

SOLUTION: This mobile telephone device is provided with a configuration to be connected to a television set (TV) 3 on the market through the use of a video cable 2 on the market. Therefore, contents (the contents of a mail or a telephone directory list or the like) which is displayed only by a small display device (LCD 4) are displayed by a large screen outer part output means (TV 3). In this case, it is judged whether an completing operation is executed by a user or not after display data are read from various display sources. When the judgement result is NO, it is judged whether the video cable 2 is connected to a video terminal or not. When the judgement is YES, a change-over switch is thrown to the side of a layout processing circuit and, then previously read display data are displayed on TV 3.

TECHNICAL FIELD

[Field of the Invention] This invention relates to the mobile phone equipment which has the description in the method of presentation of various information. In addition, in this specification, "mobile phone equipment" contains all telephone equipments that can be carried, such as a cell phone unit, PHS (personal handicap phone system) telephone equipment, and satellite mobile phone equipment.

TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] By the way, in conventional mobile phone equipment, the screen of a display was small, therefore when it was for example, PHS telephone equipment, there was a problem of it having been small and being hard to read an alphabetic character, at the time of the check of e-mail, and an input and edit. Moreover, about mail which was mentioned above and which was long-sentence-ized, and the mail with which the image was attached, there was a problem that all the contents of this mail could not be displayed at once.

[0004] This invention was made under such a background and aims at offering the mobile phone equipment which can display various information greatly and so much.

PRIOR ART

[Description of the Prior Art] Conventionally, mobile phone equipment possessed the small display (for example, "LCD" is called a liquid crystal display and the following), and was performing various displays using this small display. For example, a short text ("e-mail" is called hereafter) can be received, and this mail can be expressed to the above-mentioned small display as PHS telephone equipment. Moreover, the inclination of long-sentence-izing has the above-mentioned mail more in recent years, and an image may be attached further.

EFFECT OF THE INVENTION

[Effect of the Invention] As explained above, according to this invention, it is effective in the ability to display the various information which should be displayed with mobile phone equipment greatly and so much.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the explanatory view showing the example of use of the mobile phone equipment by 1 operation gestalt of this invention.

[Drawing 2] It is the block diagram showing the example of a configuration of the mobile phone equipment by this operation gestalt.

[Drawing 3] It is the flow chart which shows the example of a display action of the mobile phone equipment by this operation gestalt.

[Description of Notations]

1 Mobile phone equipment 2 [4 / 19 / 21 / 23 .. Layout setting means / .. A video terminal 22 .. Change-over switch / .. A frame memory, 20 .. Video signal generation circuit / .. 17 A liquid crystal display 18 .. Layout processing circuit] .. A video cable, 3 .. TV apparatus

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the mobile phone equipment which has the description in the method of presentation of various information. In addition, in this specification, "mobile phone equipment" contains all telephone equipments that can be carried, such as a cell phone unit, PHS (personal handicap phon system) telephone equipment, and satellite mobile phone equipment.

[0002]

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[0003]

[Problem(s) to be Solved by the Invention] By the way, in conventional mobile phone equipment, the screen of a display was small, therefore when it was for example, PHS telephone equipment, there was a problem of it having been small and being hard to read an alphabetic character, at the time of the check of e-mail, and an input and edit. Moreover, about mail which was mentioned above and which was long-sentence-ized, and the mail with which the image was attached, there was a problem that all the contents of this mail could not be displayed at once.

[0004] This invention was made under such a background and aims at offering the mobile phone equipment which can display various information greatly and so much.

[0005]

[Means for Solving the Problem] Invention according to claim 1 is characterized by providing an external output means to output the output signal which shows various kinds of information to a display. A display means by which invention according to claim 2 was prepared in said mobile phone equipment in mobile phone equipment according to claim 1, An internal output means to output said output signal to said display means, and when said display is not connected to said mobile phone equipment When it switches to the output by said internal output means and said display is connected to this mobile phone equipment, it is characterized by providing the means for switching switched to the output by said external output means. Invention according to claim 3 is characterized by switching said means for switching to either of the output by said internal output means, and the output by said external output means based on a setup of a user in mobile phone equipment according to claim 2. Invention according to claim 4 is characterized by providing a layout processing means to arrange said information on the screen of said display according to a predetermined format in mobile phone equipment according to claim 1. Invention according to claim 5 is characterized by providing a setting means to set up said format in mobile phone equipment according to claim 4. Invention according to claim 6 is characterized by providing a modification means to change the signal format of said output signal according to the class of said display in mobile phone equipment according to claim 1. Invention according to claim 7 is characterized by said information being at least one of the contents of the telephone directory memorized by the e-mail and the actuation menu list of this mobile phone equipment which were memorized by said mobile phone equipment, the current receiving contents of this mobile phone equipment, and this mobile phone equipment in mobile phone equipment given in either of claim 1 to claims 6.

[0006]

[Embodiment of the Invention] Hereafter, the operation gestalt of this invention is explained with reference to a drawing. Drawing 1 is the explanatory view showing the example of use of the mobile phone equipment by 1 operation gestalt of this invention. As shown in this drawing, the commercial video cable 2 can be used for this equipment 1, and it can connect it to commercial TV apparatus ("TV" is called hereafter) 3. The contents (the contents of e-mail, telephone directory list, etc.) currently displayed with conventional equipment by this only at the small display (for example, LCD4) (prepared in mobile phone equipment) can be displayed with the external output equipment (for example, TV3) of a big screen.

[0007] Drawing 2 is the block diagram showing the example of a configuration of the mobile phone equipment by this operation gestalt. In addition, in order to give explanation intelligible, this drawing shows only the configuration about the display action of this equipment.

[0008] In this drawing, CPU (central processing unit)10 controls each part of this equipment. A control panel 11 consists of two or more carbon buttons, and it is used in order to perform actuation and a setup of this equipment. Moreover, the TV carbon button (illustration abbreviation) for choosing the display by TV3 is prepared in the control panel 11. Moreover, a control panel is used in order to perform input and edit of e-mail.

[0009] A mail box 12 consists of RAM (random access memory) by which the battery back-up was carried out, for example, and memorizes mail data. Mail data consists of text data, image data, etc. The control program memory 13 consists of a ROM (read-only memory), and memorizes the program for control used in CPU10. Moreover, the actuation menu list is also memorized by the control program memory 13 (this equipment).

[0010] A transmitter-receiver 14 performs transmission and reception by wireless through an antenna 15. It consists of rewritable nonvolatile memory (a flash plate ROM, EEPROM, etc.), and the telephone directory memory 16 memorizes the personal data registered by the user. These personal data consist of a registration partner's name, the telephone number, the address, images (photograph of his face etc.), personal data, etc.

[0011] The above-mentioned mail box 12, the control program memory 13, a transmitter-receiver 14, and the telephone directory memory 16 are connected with CPU10 by bus. Therefore, exchange of data is possible for CPU10 among these components. Hereafter, these components (a mail box 12, the control program memory 13, a transmitter-receiver 14, telephone directory memory 16) are called the "display source", and the data (it should display) obtained from this display source are called a "indicative data."

[0012] The layout processing circuit 17 drives LCD4 based on the indicative data obtained by CPU10. At this time, the layout processing circuit 17 arranges this indicative data on the screen of LCD4 according to the format for which it opted beforehand. The layout processing circuit 18 changes into VRAM data the indicative data obtained by CPU10, and writes these VRAM data in a frame memory 19. At this time, the layout processing circuit 18 writes these VRAM data in a frame memory 19 according to the format specified by the layout setting means 23. The video signal generation circuit 20 generates a video signal based on the VRAM data in a frame memory 19, and outputs this video signal from the video terminal 21.

[0013] If a video cable 2 is connected to this video terminal 21, the connection detection pin (illustration abbreviation) which will be in ON condition is prepared in the video terminal 21. A change-over switch 22 connects CPU10 and the layout processing circuit 17, when a connection detection pin is in an OFF condition, and on the other hand, when a connection detection pin is in ON condition, it connects CPU10 and the layout processing circuit 18.

[0014] Next, the display action of the mobile phone equipment by the above-mentioned configuration is explained. Drawing 3 is a flow chart which shows the example of a display action of the mobile phone equipment by this operation gestalt. First, if a user turns on this equipment, the display-action processing will progress to step S1.

[0015] At step S1, it progresses to step S2, after reading an indicative data from the various display sources. Here, "indicative datas" is the personal data for example, in the received data of the real time in which the actuation menu list (this equipment) in the mail data in a mail box 12 and the control program memory 13 and the transmitter-receiver 14 are carrying out current reception, and the telephone directory memory 16.

[0016] At step S2, it judges whether termination actuation was performed by the user. When this decision result is "NO", it progresses to step S3. At step S3, it judges whether the video cable 2 is connected to the video terminal 21. When this decision result is "NO", it progresses to step S4. In step S4, it judges whether the TV (prepared in control panel 11) carbon button was pushed by the user. When this decision result is "NO", it progresses to step S5. At step S5, after displaying the indicative data read at step S1 on LCD4, it returns to step S1.

[0017] On the other hand, when the decision result of step S3 is "YES", or when the decision result of step S4 is "YES", it progresses to step S6. At step S6, it progresses to step S7, after switching a change-over switch 22 to the layout processing circuit 18 side. At step S7, after displaying the indicative data read at step S1 on TV3, it returns to step S1.

[0018] This equipment displays by repeating the above processing. On the other hand, processing is ended when the decision result of step S2 is "YES" (i.e., when termination actuation is performed by the user). Above, explanation of the display action of the mobile phone equipment by the above-mentioned configuration is ended.

[0019] As mentioned above, although the operation gestalt of this invention has been explained in full detail with reference to a drawing, a concrete configuration is not restricted to this operation gestalt, and even if there is modification of a design of the range which does not deviate from the summary of this invention etc., it is included in this invention. For example, although it was made to display on either of LCD and TV, you may make it express as 1 operation gestalt mentioned above to both LCD and TV at coincidence depending on conditions.

[0020] Similarly, with the above-mentioned operation gestalt, when the video cable is connected, although TV display is performed, it may be the case where the video cable is connected, or may not be made not to perform TV display (change-over conditions and setup).

[0021] Moreover, with the above-mentioned operation gestalt, as change-over conditions for an indicating equipment, although "connection (step S3) of a video cable" and

"actuation (step S4) of the TV carbon button" were shown, you may switch based on other conditions. As these other change-over conditions, a dc-battery residue, arrival, etc. of mobile phone equipment can be considered. For example, when the dc-battery residue has decreased (while the video cable is connected, even if it is the case where TV display is not performed by setup of a user), it is possible to switch to a video time road side automatically, and to carry out the flash plate of the TV screen (to warning sake) etc.

[0022] In addition, the combination of these change-over conditions and displays (chosen by these change-over conditions) is good also as a setup by the user being possible.

[0023] Moreover, although the actuation menu list (this equipment) in the mail data in a mail box 12 and the control program memory 13 and the transmitter-receiver 14 used the received data of the real time which is carrying out current reception, and the personal data in the telephone directory memory 16 as an indicative data with the above-mentioned operation gestalt, other display sources and indicative datas may be used.

[0024] Moreover, as an external output terminal, although only the video terminal was prepared, a voice output terminal is also prepared and voice may be made to be outputted from TV with the above-mentioned operation gestalt.

[0025] Moreover, with the above-mentioned operation gestalt, as an external output signal, although the video signal was used, other signals (for example, RGB code etc.) may be used. You may make it change the generation method (namely, signal format of an output signal a video signal, RGB code, etc.) of an output signal according to the classes (TV, monitor for personal computers, etc.) of display connected at this time.

[0026] Moreover, with the above-mentioned operation gestalt, as external output equipment, although commercial TV (namely, CRT) was used, other indicating equipments (liquid crystal TV, plasma display, etc.) may be used.

[0027] Moreover, although the mail box 12 and the frame memory 19 were formed according to the individual with the above-mentioned operation gestalt, about these two, it is good also as sharing of one memory being possible. By this, when not performing video outlet actuation, a frame memory 19 can be used as a mail box 12, consequently more mails can be stored.

[0028] Moreover, with the above-mentioned operation gestalt, although this equipment and external output equipment were connected with the cable, you may connect by the non-cable which used an electric wave and light.

[0029] Moreover, generally, although the screen layout of LCD of mobile phone equipment cannot be set up, in the case of this invention, it is good [a screen layout / the layout setting means 23] also as a setup by the user being possible in the layout (for example, displaying image data on the right-hand side of a screen, and text data being displayed on the left-hand side of a screen at the time of an e-mail display) to specify (as opposed to the layout processing circuit 18). In addition, he may enable it a user not only can to create a favorite layout uniquely, but to choose these layouts as mobile phone equipment from the layout patterns of the shoes memorized beforehand.

[0030]

[Effect of the Invention] As explained above, according to this invention, it is effective in the ability to display the various information which should be displayed with mobile phone equipment greatly and so much.

CLAIMS

[Claim 1] Mobile phone equipment characterized by providing an external output means to output the output signal which shows various kinds of information to a display.

[Claim 2] The mobile phone equipment characterized by to provide the means for switching which switches to the output by said external output means when it switches to the output by said internal output means when said display is not connected to the display means formed in said mobile phone equipment, an internal output means output said output signal to said display means, and said mobile phone equipment, in mobile phone equipment according to claim 1, and said display is connected to this mobile phone equipment.

[Claim 3] It is mobile phone equipment characterized by switching said means for switching to either of the output by said internal output means, and the output by said external output means in mobile phone equipment according to claim 2 based on a setup of a user.

[Claim 4] Mobile phone equipment characterized by providing a layout processing means to arrange said information on the screen of said display according to a predetermined format, in mobile phone equipment according to claim 1.

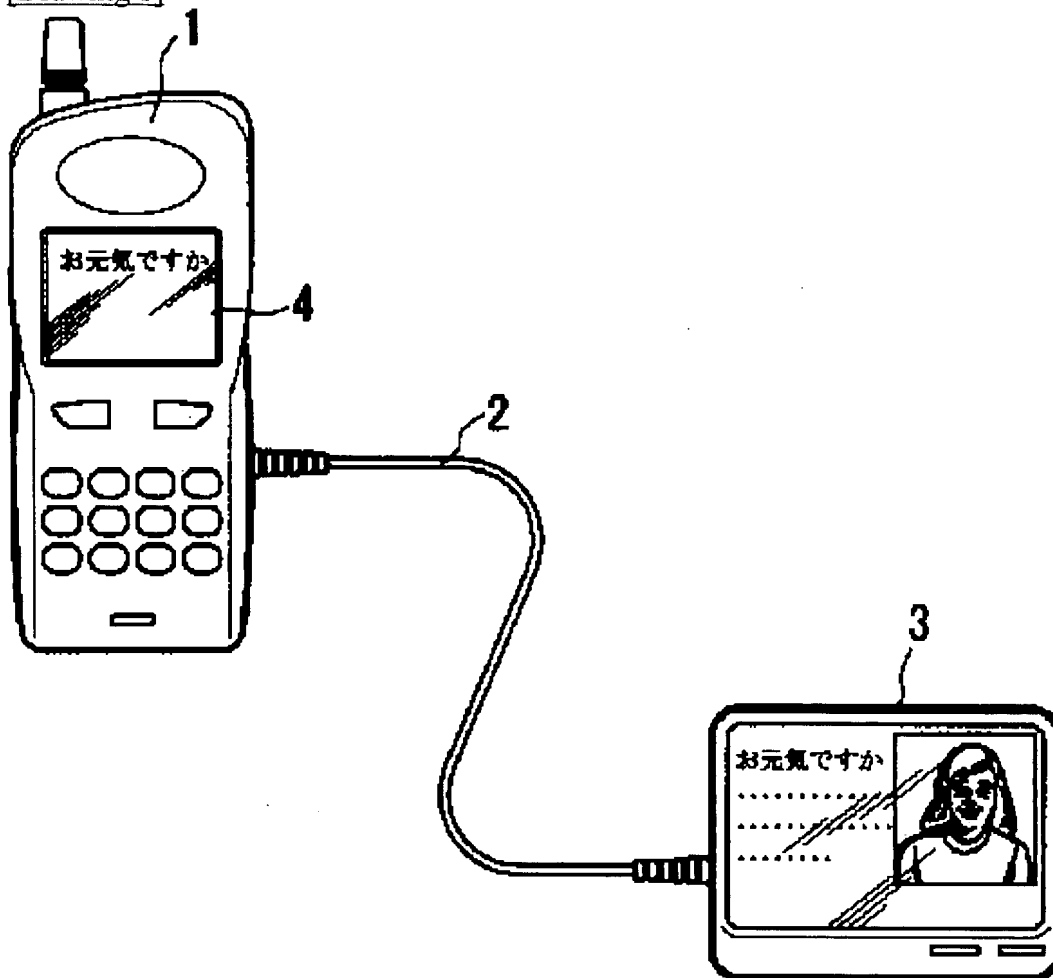
[Claim 5] Mobile phone equipment characterized by providing a setting means to set up said format, in mobile phone equipment according to claim 4.

[Claim 6] Mobile phone equipment characterized by providing a modification means to change the signal format of said output signal according to the class of said display, in mobile phone equipment according to claim 1.

[Claim 7] It is mobile phone equipment characterized by being at least one of the contents of the telephone directory memorized by the e-mail and the actuation menu list of this mobile phone equipment said information was remembered to be by said mobile phone equipment in mobile phone equipment given in either of claim 1 to claims 6, the current receiving contents of this mobile phone equipment, and this mobile phone equipment.

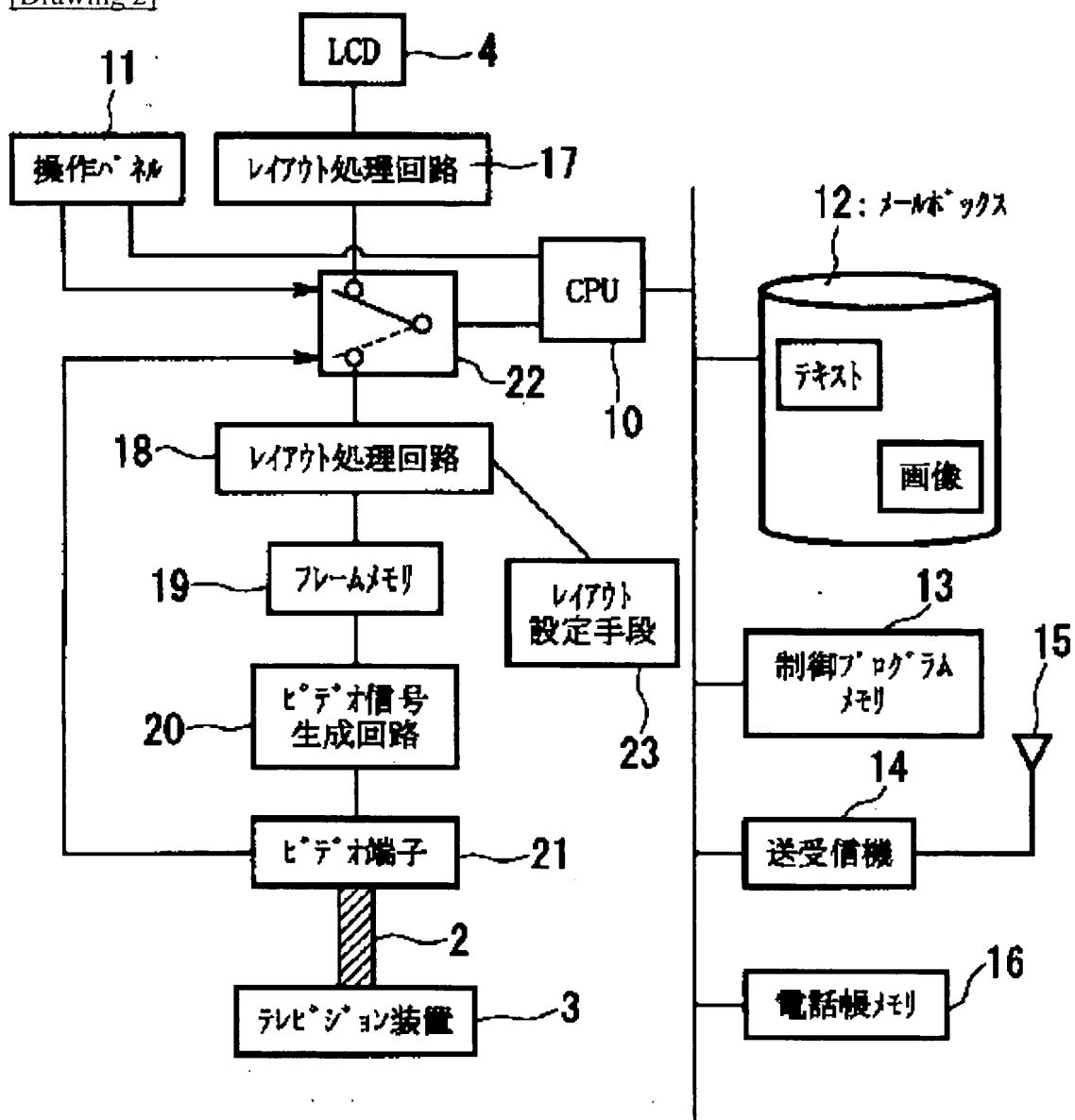
DRAWINGS

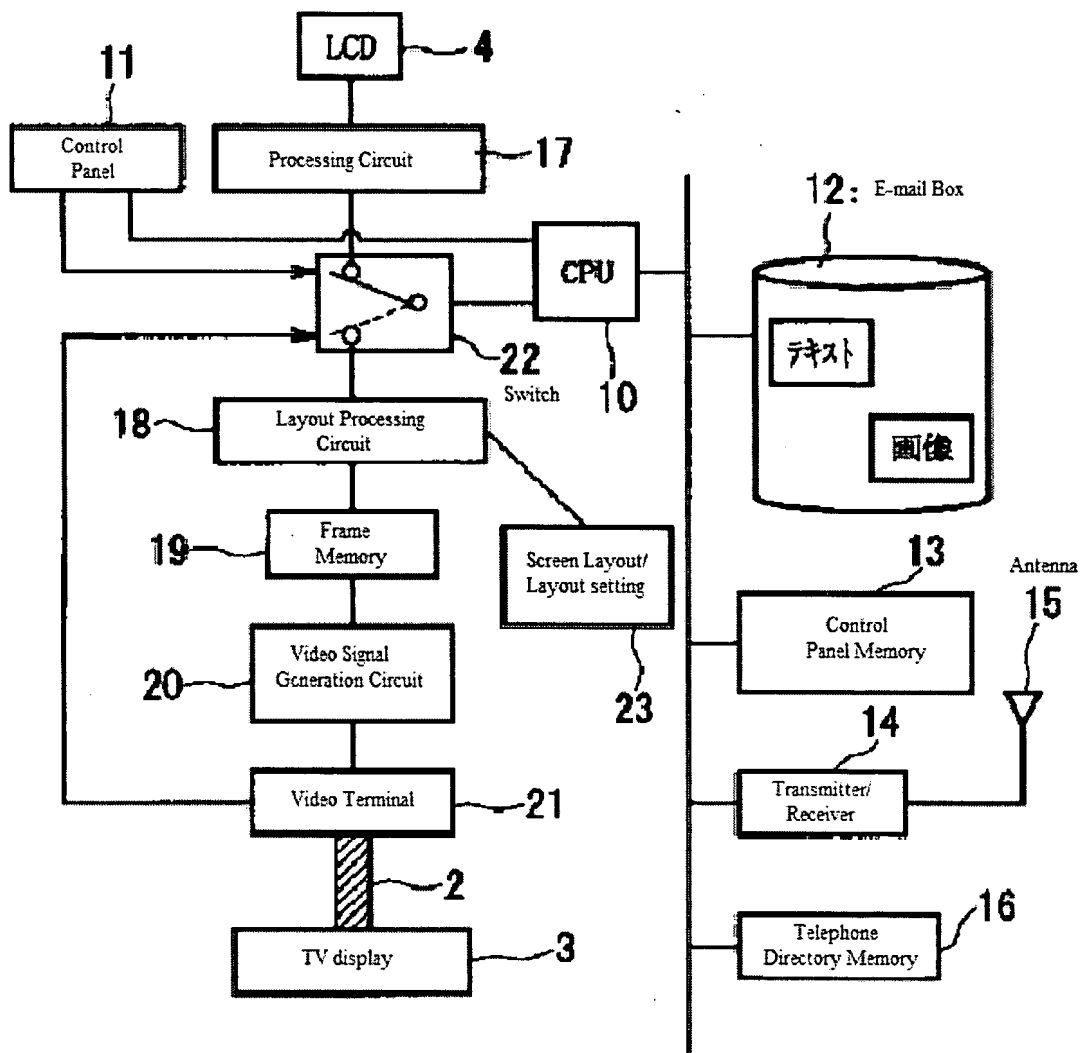
[Drawing 1]



- 1. Mobile Phone equipment
- 2. LCD display
- 3. Video cable
- 4. TV

[Drawing 2]





[Drawing 3]

